

REMARKS / ARGUMENTS

Status of Claims

Claims 1-13 and 16-47 are pending in the application. Claims 16-45 have been withdrawn. Claims 1-13, 46 and 47 stand rejected. Claim 47 is objected to due to informalities. Applicant has amended Claims 46 and 47, leaving Claims 1-13, 46 and 47 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under non-statutory double patenting and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Claim Objections

Claim 47 is objected to because of the following informality requiring correction: in claim 47, “the 3D model” and “the at least three geometric markers and corresponding anatomical landmarks” lack antecedent basis.

Applicant has amended Claim 47 to depend from Claim 46 to overcome this objection. Applicant submits that Claim 46 as amended provides proper antecedent basis.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw these objections, which Applicant considers to be overcome.

Double Patenting

Claims 1-13 and 46-47 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-37 of U.S Patent 7286866 to Okerlund et al. Applicant hereby submits an executed terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome the rejection.

Claims 1-13 and 46-47 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-42 of U.S Patent

7346381 to Okerlund et al. Applicant hereby submits an executed terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome the rejection.

Applicant submits that the submission of the above referenced terminal disclaimers overcomes the obviousness-type double patenting rejection. Reconsideration and withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103(a)

Claims 1-13 and 46-47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Okerlund et al. (U.S. Patent Publication No. 2003/0187358, hereinafter “Okerlund”) in view of Vesely et al. (U.S. Patent No. 6246898, hereinafter “Vesely”).

The Examiner acknowledges that Okerlund fails to show the use of the system for locating and navigating an interventional tool and looks to Vesely to cure this deficiency.

Claims 1-13 and 46-47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Keidar et al. (U.S. Patent 6650927, hereinafter “Keidar”) in view of Subramanyan et al. (U.S. Patent 6782284, hereinafter “Subramanyan”), Chen et al. (WO 96/10949, hereinafter “Chen”) and Vesely.

The Examiner finds that it would be obvious to one of ordinary skill in the art at the time the invention was made to have used the combined system of Keidar, Subramanyan and Chen for location and navigation of an interventional tool as taught by Vesely.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed.

Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

With respect to the rejection of Claims 1-13 and 46-47 in light of Okerlund in view of Vesely, Applicant respectfully submits that Okerlund is disqualified as prior art. For applications filed on or after November 29, 1999, this rejection may be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. [See 35 U.S.C. 103 (c), MPEP 706.02(l)(1) and 706.02(l)(2)]. As noted in the declaration under 37 CFR 1.130 accompanied herewith, that Application serial number 10/710,923 and Okerlund were, at the time the invention of Application serial number 10/710,923 was made, subject to an obligation of assignment to General Electric Company and Dr. Jasbir S. Sra. As discussed above with respect to the obviousness-type double patenting rejection, a terminal disclaimer in compliance with 37 CFR 1.321(c) accompanies this Amendment. Therefore, Okerlund (U.S. Patent 7,286,866, Publication number 2003/0187358) is now disqualified as prior art and must not be used in a 35 U.S.C. 103(a) obviousness rejection. Accordingly, reconsideration and withdrawal of the rejections of claims 1–13, 46 and 47 under 35 U.S.C. § 103(a) is respectfully requested.

Applicant respectfully submits that Claims 1-13 and 46-47 are not obvious in view of Keidar, in light of Subramanyan, Chen and Vesely. In the office action, the Examiner states that Vesely teaches the use of transducers (markers) to register 3-D image data of the patient with the coordinate system and that this results in a model of the patient's organ and the tool, which the physician can then accurately guide within the body. [paper 20080626, Page 7]. Applicant respectfully disagrees.

Applicant finds that Vesely describes a real time ultrasound technique. In this technique sound waves are used to track real time location of cardiac needles, probes catheters etc. Vesely also discloses that transducers are energized to yield signal with respect to the field of view, and no fixation with anatomical landmarks. Applicant submits that utilization of reference locations taught by Vesely are at a greater distance from the points of interest which could introduce variability and motion if the reference points are relocated relative to the interventional tool. Therefore, the operator is limited to being able to acquire/reference/visualize only that anatomical pathway over which the tool has traveled. Thus the actual patient vascular opening and dimensions may be lost and can result in false security for the operator, meaning that if the actual vessel is in a different location, interventional activities will be performed at suboptimal locations.

In contrast to Vesely, Claim 1 includes the limitations of cardiac image data that has been stored in a database and the image is viewable in at least one of a bi-ventricular pacing, atrial fibrillation and atrial flutter planning procedure. Applicant submits that since the image is used in a planning procedure, then the image data must have been pre-acquired. Therefore 3D images can be used to register and subsequently navigate the tools to the desired locations rather than being limited to the pathway over which the tool has traveled as taught by Vesely. Accordingly, Applicant respectfully submits that claimed combination of Claim 1 provides a synergistic effect that is not disclosed, taught, or suggested by the prior art.

Applicant respectfully submits that combination of Keidar, Subramanyan and Chen fail to overcome the deficiencies of Vesely and that the cited prior art fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

With respect to dependent Claims 2-13, 46 and 47, which depend directly or indirectly from independent Claim 1 and also incorporate all of the limitations of the

parent claim. As such, for at least the reasons set forth above, Applicant submits that Claims 2-13, 46 and 47 are not obvious view of Keidar, in light of Subramanyan, Chen and Vesely. Reconsideration and withdrawal of this rejection is respectfully requested.

In addition to the foregoing, Applicant finds no motivation or teaching in any of the References to modify a primary Reference in view of its respective secondary Reference to arrive at the claimed arrangement of elements without disturbing the accuracy characteristics of the three dimensional models of the actual patient for use in planning and intended purpose of the art being modified.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, fail to teach a modification to prior art that does not render the prior art being modified unsatisfactory for its intended purpose, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the foregoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

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